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CHAPTER I.

Farmers' Co-operative Paper Mills.

The Co-operative Department of the Tamil Nadu Government has secured a Letter of Intent from the Government of India to establish a Paper Mill with the capacity of 100 tons of paper per day.

The cost of the Project will not exceed Rs. 10 crores, of which the foreign exchange content will be Rs. 9.74 crores.

It is proposed to use 'Pulichi' stems (also known as Mesta or Kenaf or Hibiscus Cannabinus) and Agathi wood (also known at Sesbania Grandiflora). A blend consisting of one-third of Pulichi sulphite pulp and two-thirds of Agathi ground wood would be satisfactory both from the view of quality and cost of production. As the Project opens the way to farmers to cultivate an economically important new crop in Tamil Nadu, a few facts on the subject are set out in this booklet.

CHAPTER II.

Raw Materials.

The main difficulty encountered in increasing the production of paper in the country, is the dearth of raw materials.

In Europe, and the American continuent, the raw material is soft wood (spruce, pine, etc.) which takes 30 to 90 years to grow. These countries have enough land to plan long-term growth of such soft wood. trees.

In India, the conventional raw material is the Bamboo, which takes 12 to 18 years to grow, and this forest wealth is being fast depleted. Some of the Paper Mills in West Bengal have to draw their raw material from a distance of 300 miles. Even so, the Bamboo is suitable only for chemical process of pulping, which is expensive, and not for mechanical grinding.

Thus, paper, which is an essential commodity, continues to be imported, and the import gap is increasing year after year.

CHAPTER III.

Pulichi (Kenaf).

The search for a suitable raw material for manufacture of paper, to replace Bamboo, was pursued with vigour. The aim was to find out a tree or plant, with fibre length equal to that of Bamboo and which would take less than one year to grow.

Experiments were made, with various kinds of plants numbering about 400, and finally KENAF was chosen as the most suitable. This is generally known as Mesta, or Pulichi in Tamil, its botanical name being Hibiscus Cannabinus.

There are several advantages which Pulichi has, as raw material for paper.

It is easy to cultivate, water requirements being low, and it ripens in 4 to 5 months. It is grown in Andhra Pradesh, as a substitute for Jute, but it is not at present cultivated in Tamil Nadu except as a fence crop in stray areas.

It gives a higher yield per acre in Tamil Nadu, than any other State in India, by reason of the State's climate and soil conditions.

In areas above Latitude 20, the yield is about 20 tons of dry Pulichi (dry wood including bark) per acre, but in areas nearer to the equator the yield is higher, as the plant is photo-sensitive.

In Tamil Nadu most of the land lies between Latitude 8–15, and the yield per acre is about 30 tons. As many as 1,00,000 plants per acre can be grown.

It may be noted that the plant requires high temperature but does not tolerate standing water.

CHAPTER IV.

Break-through

Pulichi is several times more productive than pulp-wood trees on a per acre per month basis. It is suitable for cultivation by small farmers and it would give a greater income than most other cash-crops. The farmers will be able to find a ready market for their product, by running the Paper Mill as a Farmers' Co-operative.

Kenaf (Pulichi) provides the break-through, in respect of the raw-materials barrier, which stood in the way of self-sufficiency in paper, an indispensable commodity in any civilised country.

The Tamil Nadu State is geographically in a happy position, to take advantage of the new development, and fill up the paper gap which confronts the country.

CHAPTER V.

Technical Advantages.

Some technical details which highlight the advantage of Kenaf (Puilichi) as compared to Bamboo may be mentioned here :—

Fibre-length :

		Millimetres.
Pulichi-Bast	... ...	2.9
Bamboo	... ...	1.5
Pulichi-core	... ...	0.7
Hard wood	... ...	0.9

Lignin.—As the Lignin content of Pulichi (Kenaf) is lower than that of wood, it takes less chemicals for pulping.

Blending.—The blending of Pulichi sulphite pulp, with ground wood gives the best quality paper, with folding endurance, opacity, etc.

CHAPTER VI.

Agathi—Ground wood.

The Pulichi (Kenaf) pulp has to be blended with ground wood, for the purpose of producing commercially acceptable paper.

The best trees, for making ground wood pulp, are generally believed to be Eucalyptus, Acacia (Odai), etc. These conventional types of wood are unsuitable for India as they suffer from the disqualification of requiring a large area of land. These trees require

6 to 12 years to grow and the wood produced per acre per year is not economic.

The tree, rather the plant, Agathi (Sesbania Grandiflora) grows in 8 to 9 months, and yields 80 to 90 tons (wet weight) per acre, when planted with density of 45,000 per acre. The wood of Agathi is capable of being ground and bleached more easily than other hard wood.

Besides, Agathi grows well in Tamil Nadu, as the climate is suitable, and the ground wood of Agathi may be mixed with Pulichi pulp in the proportion of 2 parts Agathi and 1 part Pulichi and the pulp so mixed is of such quality as to produce good printing and writing paper.

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